KD2290 Reactor Chemistry 6.0 credits

Reaktorkemi

This is a translation of the Swedish, legally binding, course syllabus.

Establishment

Course syllabus for KD2290 valid from Autumn 2007

Grading scale

A, B, C, D, E, FX, F

Education cycle

Second cycle

Main field of study

Chemical Science and Engineering

Specific prerequisites

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

Students shall after the course be able to:

• Describe the chemical processes that are important in today's nuclear reactors with focus on water chemistry and radiolysis

• Apply the above knowledge on the applications of chemical nature that occur in a nuclear reactor, such as corrosion, formation of CRUD, degradation of ion exchangers, etc.

• Understand the basic differences in the chemistry of different reactor types between other types than water reactors

• Describe the chemical problems one is facing when designing a 4th generation nuclear reactor

Course contents

The main areas that will be treated are:

• Reactor concepts

• Water chemistry

• Radiation chemistry

• Corrosion

• Controlled water chemistry

• Water treatment

• Decontamination

• Reactor chemistry for other reactor types (incl. gen. IV)

• Transmutation

Course literature

Will be handed out during the course

Examination

- PRO1 - Project, 1.5 credits, grading scale: P, F
- TEN1 - Examination, 4.5 credits, grading scale: A, B, C, D, E, FX, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

If the course is discontinued, students may request to be examined during the following two academic years.

Other requirements for final grade

Written exam (TEN1; 4,5 hp)
Project (PRO1; 1,5 hp)

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.